

DRAFT
DO NOT QUOTE OR CITE

August 1996
Draft Report

VOLUME I - GENERAL FACTORS

EXPOSURE FACTORS HANDBOOK

Update to Exposure Factors Handbook
EPA/600/8-89/043 - May 1989

NOTICE

THIS DOCUMENT IS A PRELIMINARY DRAFT. It has not been formally released by the U.S. Environmental Protection Agency and should not at this stage be construed to represent Agency policy. It is being circulated for comments on its technical accuracy and policy implications.

Office of Research and Development
National Center for Environmental Assessment
U.S. Environmental Protection Agency
Washington, DC 20460

DRAFT
DO NOT QUOTE OR CITE

August 1996
Draft Report

VOLUME II - FOOD INGESTION FACTORS

EXPOSURE FACTORS HANDBOOK

Update to Exposure Factors Handbook
EPA/600/8-89/043 - May 1989

NOTICE

THIS DOCUMENT IS A PRELIMINARY DRAFT. It has not been formally released by the U.S. Environmental Protection Agency and should not at this stage be construed to represent Agency policy. It is being circulated for comments on its technical accuracy and policy implications.

Office of Research and Development
National Center for Environmental Assessment
U.S. Environmental Protection Agency
Washington, DC 20460

DRAFT
DO NOT QUOTE OR CITE

August 1996
Draft Report

VOLUME III - ACTIVITY FACTORS

EXPOSURE FACTORS HANDBOOK

Update to Exposure Factors Handbook
EPA/600/8-89/043 - May 1989

NOTICE

THIS DOCUMENT IS A PRELIMINARY DRAFT. It has not been formally released by the U.S. Environmental Protection Agency and should not at this stage be construed to represent Agency policy. It is being circulated for comments on its technical accuracy and policy implications.

Office of Research and Development
National Center for Environmental Assessment
U.S. Environmental Protection Agency
Washington, DC 20460

<i>E</i>	<i>F</i>	<i>H</i>
----------	----------	----------

DISCLAIMER

This document is a draft report subject to review by the Science Advisory Board. Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

E	F	H
---	---	---

FOREWORD

The National Center for Environmental Assessment (NCEA) of EPA's Office of Research and Development (ORD) has five main functions: (1) providing risk assessment research, methods, and guidelines; (2) performing health and ecological assessments; (3) developing, maintaining, and transferring risk assessment information and training; (4) helping ORD set research priorities; and (5) developing and maintaining resource support systems for NCEA. The activities under each of these functions are supported by and respond to the needs of the various program offices. In relation to the first function, NCEA sponsors projects aimed at developing or refining techniques used in exposure assessments.

This handbook was first published in 1989 to provide statistical data on the various factors used in assessing exposure. This revised version of the handbook provides the up-to-date data on these exposure factors. The recommended values are based solely on our interpretations of the available data. In many situations different values may be appropriate to use in consideration of policy, precedent or other factors.

Michael A. Callahan
Director
National Center for Environmental
Assessment, Washington Office

PREFACE

The National Center for Environmental Assessment has prepared this handbook to address factors commonly used in exposure assessments. This handbook was first published in 1989 in response to requests from many EPA Program and Regional offices for additional guidance on how to select values for exposure factors.

Several events sparked the efforts to revise the Exposure Factors Handbook. First, since its publication in 1989, new data have become available. Second, the Risk Assessment Council issued a memorandum titled, "Guidance on Risk Characterization for Risk Managers and Risk Assessors", dated February 26, 1992 which emphasized the use of multiple descriptors of risk (i.e., a measure of tendency such as average or mean central tendency, high end of individual risk, population risk, important subpopulations). Third, EPA published the revised Guidelines for Exposure Assessment.

As part of the efforts to revise the handbook, the EPA Risk Assessment Forum sponsored a two-day peer involvement workshop which was conducted during the summer of 1993. The workshop was attended by 57 scientists from academia, consulting firms, private industry, the states, and other Federal agencies. The purpose of the workshop was to identify new data sources, to discuss adequacy of the data and the feasibility of developing statistical distributions and to establish priorities.

As a result of the workshop, two new chapters have been added to the handbook. These chapters are: Consumer Product Use and the Reference Residence. This document also provides a summary of the available data on consumption of drinking water; consumption of fruits, vegetables, beef, dairy products, and fish; soil ingestion; inhalation rates; skin surface area; soil adherence; lifetime; activity patterns; and body weight.

E	F	H
---	---	---

AUTHORS, CONTRIBUTORS, AND REVIEWERS

The National Center for Environmental Assessment (NCEA), Office of Research and Development was responsible for the preparation of this handbook. The original document was prepared by Versar Inc. under EPA Contract No. 68-02-4254, Work Assignment No. 189. John Schaum, of NCEA-Washington Office, served as the EPA Work Assignment Manager, providing overall direction and coordination of the production effort as well as technical assistance and guidance. Revisions, updates, and additional preparation were provided by Versar Inc. under Contract Numbers 68-D0-0101, 68-D3-0013, and 68-D5-0051. Russell Kinerson and Greg Kew have served as EPA Work Assignment Managers during previous efforts of the update process. Jackie Moya served as Work Assignment Manager for the current updated version, providing overall direction, technical assistance, and serving as contributing author.

AUTHORS	DESKTOP PUBLISHING	GRAPHICS
Patricia Wood	Susan Perry	Kathy Bowles
Linda Phillips		Jennifer Baker
Aderonke Adenuga	WORD PROCESSING	
Mike Koontz		
Harry Rector	Valerie Schwartz	
Charles Wilkes		
Margaret Wilson		

Exposure Assessment Division
Versar Inc.
Springfield, VA

CONTRIBUTORS AND REVIEWERS

The following EPA individuals have reviewed and/or have been contributing authors of this document.

Michael Dellarco
Robert McGaughy
Amy Mills
Jacqueline Moya
Susan Perlin

Paul Pinsky
John Schaum
Paul White
Amina Wilkins
Chieh Wu

An earlier draft of this document was peer reviewed by a panel of experts at a peer-review workshop held in 1995. Members of the Peer Review Panel were as follows:

Edward Avol
Department of Preventive Medicine
School of Medicine
University of Southern California

U.S. Department of Agriculture

James Axley
School of Architecture
Yale University

P.J. (Bert) Hakkinen
Paper Product Development & Paper Technology
Divisions

David Burmaster
Alceon Corporation

The Proctor & Gamble Company

Steven Colome
Integrated Environmental Services

Mary Hama
Beltsville Human Nutrition Research Center
U.S. Department of Agriculture

Michael DiNovi
Chemistry Review Branch
U.S. Food & Drug Administration

Dennis Jones
Agency for Toxic Substances & Disease Registry

Dennis Druck
Environmental Scientist
Center of Health Promotion & Preventive
Medicine
U.S. Army

John Kissel
Department of Environmental Health
School of Public Health & Community Medicine

J. Mark Fly
Department of Forestry, Wildlife, & Fisheries
University of Tennessee

Neil Klepeis
Information Systems & Services, Inc.

Larry Gephart
Exxon Biomedical Sciences, Inc.

Andrew Persily
National Institute of Standards & Technologies

Patricia Guenther
Beltsville Human Nutrition Research Center

Barbara Petersen
Technical Assessment Systems, Inc.

Thomas Phillips
Research Division
California Air Resources Board

Paul Price
ChemRisk

E	F	H
---	---	---

John Risher
Division of Toxicology
The Agency for Toxic Substances & Disease Registry

John Robinson
University of Maryland

Peter Robinson
The Proctor & Gamble Company

P. Barry Ryan
Department of Environmental & Occupational
Health
Rollins School of Public Health
Emory University

Val Schaeffer
U.S. Consumer Product Safety Commission

Brad Shurdut
DowElanco

John Talbott
U.S. Department of Energy

Frances Vecchio
Beltsville Human Nutrition Research Center
U.S. Department of Agriculture

The following individuals within EPA have reviewed an earlier draft of this document and provided valuable comments:

OFFICE	REVIEWERS/CONTRIBUTORS
Office of Research and Development	Maurice Berry Jerry Blancato Elizabeth Bryan Curtis Dary Stan Durkee Manuel Gomez Wayne Marchant Sue Perlin James Quanckenboss Glen Rice Lance Wallace
Office of Emergency and Remedial Response	Jim Konz
Office of Pollution, Pesticides and Toxic Substances	Pat Kennedy Cathy Fehrenbacker
Office of Water	Denis Borum
Office of Air Quality Planning and Standards	Warren Peters
EPA Regions	Steve Ehlers - Reg. VI Maria Martinez - Reg. VI Mike Morton - Reg. VI Jeffrey Yurk - Reg. VI Youngmoo Kim - Reg. VI

<i>E</i>	<i>F</i>	<i>H</i>
----------	----------	----------

In addition, the National Exposure Research Laboratory (NERL) of the Office of Research and Development of EPA made an important contribution to this handbook by conducting additional analysis of the National Human Activity Pattern Survey (NHAPS) data. EPA input to the NHAPS data analysis came from Karen A. Hammerstrom and Jacqueline Moya from NCEA-Washington Office; William C. Nelson from NERL-RTP, and Stephen C. Hern, Joseph V. Behar (retired), and William H. Engleman from NERL-Las Vegas.

TABLE OF CONTENTS

	<u>Page No.</u>
1. INTRODUCTION	1-1
1.1. PURPOSE	1-1
1.2. INTENDED AUDIENCE	1-1
1.3. BACKGROUND	1-1
1.3.1. Selection of Studies for the Handbook	1-1
1.3.2. Using the Handbook in an Exposure Assessment	1-3
1.3.3. Approach Used to Develop Recommendations for Exposure Factors	1-4
1.3.4. Characterizing Variability	1-5
1.4. GENERAL EQUATION FOR CALCULATING DOSE	1-10
1.5. RESEARCH NEEDS	1-12
1.6. ORGANIZATION	1-12
1.7. REFERENCES FOR CHAPTER 1	1-13
APPENDIX 1A	1A-1
2. ANALYSIS OF UNCERTAINTY	2-1
2.1. CONCERN ABOUT UNCERTAINTY	2-1
2.2. UNCERTAINTY VERSUS VARIABILITY	2-2
2.3. TYPES OF UNCERTAINTY	2-2
2.4. TYPES OF VARIABILITY	2-4
2.5. METHODS OF ANALYZING UNCERTAINTY AND VARIABILITY	2-5
2.6. PRESENTING RESULTS OF UNCERTAINTY ANALYSIS	2-8
2.7. REFERENCES FOR CHAPTER 2	2-9
3. DRINKING WATER INTAKE	3-1
3.1. BACKGROUND	3-1
3.2. KEY GENERAL POPULATION STUDIES ON DRINKING WATER INTAKE	3-1
3.3. RELEVANT GENERAL POPULATION STUDIES ON DRINKING WATER INTAKE	3-10
3.4. PREGNANT AND LACTATING WOMEN	3-21
3.5. HIGH ACTIVITY LEVELS/HOT CLIMATES	3-23
3.6. RECOMMENDATIONS	3-25
3.7. REFERENCES FOR CHAPTER 3	3-31
4. SOIL INGESTION AND PICA	4-1
4.1. BACKGROUND	4-1
4.2. KEY STUDIES ON SOIL INTAKE AMONG CHILDREN	4-1
4.3. RELEVANT STUDIES ON SOIL INTAKE AMONG CHILDREN	4-11
4.4. SOIL INTAKE AMONG ADULTS	4-17
4.5. PREVALENCE OF PICA	4-18
4.6. DELIBERATE SOIL INGESTION AMONG CHILDREN	4-19
4.7. RECOMMENDATIONS	4-19
4.8. REFERENCES FOR CHAPTER 4	4-24

TABLE OF CONTENTS (continued)

	<u>Page No.</u>
5. INHALATION ROUTE	5-1
5.1. EXPOSURE EQUATION FOR INHALATION	5-1
5.2. INHALATION RATE	5-1
5.3. REFERENCES FOR CHAPTER 5	5-25
APPENDIX 5A	5A-1
6. DERMAL ROUTE	6-1
6.1. EQUATION FOR DERMAL DOSE	6-1
6.2. SURFACE AREA	6-2
6.3. DERMAL ADHERENCE TO SOIL	6-6
6.4. RECOMMENDATIONS	6-8
6.5. REFERENCES FOR CHAPTER 6	6-9
APPENDIX 6A	6A-1
7. BODY WEIGHT STUDIES	7-1
7.1. KEY BODY WEIGHT STUDY	7-1
7.2. RELEVANT BODY WEIGHT STUDIES	7-6
7.3. RECOMMENDATIONS	7-7
7.4. REFERENCES FOR CHAPTER 7	7-7
8. LIFETIME	8-1
8.1. KEY STUDY ON LIFETIME	8-1
8.2. RECOMMENDATIONS	8-1
8.3. REFERENCES FOR CHAPTER 8	8-1
9. INTAKE OF FRUITS AND VEGETABLES	9-1
9.1. BACKGROUND	9-1
9.2. INTAKE STUDIES	9-2
9.3. RECOMMENDATIONS	9-8
9.4. REFERENCES FOR CHAPTER 9	9-9
APPENDIX 9A	9A-1
APPENDIX 9B	9B-1
10. INTAKE OF FISH AND SHELLFISH	10-1
10.1. BACKGROUND	10-1
10.2. KEY GENERAL POPULATION STUDIES	10-2
10.3. RELEVANT GENERAL POPULATION STUDIES	10-12
10.4. KEY RECREATIONAL (MARINE FISH STUDIES)	10-17
10.5. RELEVANT RECREATIONAL MARINE STUDIES	10-22
10.6. KEY FRESHWATER RECREATIONAL STUDIES	10-26
10.7. RELEVANT FRESHWATER RECREATIONAL STUDIES	10-34
10.8. NATIVE AMERICAN FRESHWATER STUDIES	10-36

TABLE OF CONTENTS (continued)

	<u>Page No.</u>
10.9 OTHER FACTORS	10-44
10.10. RECOMMENDATIONS	10-49
10.11 REFERENCES FOR CHAPTER 10	10-52
APPENDIX 10A	10A-1
APPENDIX 10B	10B-1
APPENDIX 10C	10C-1
11. INTAKE OF MEAT AND DAIRY PRODUCTS	11-1
11.1. INTAKE STUDIES	11-1
11.2. FAT CONTENT OF MEAT AND DAIRY PRODUCTS	11-5
11.3. CONVERSION BETWEEN AS CONSUMED AND DRY WEIGHT INTAKE RATES	11-6
11.4. RECOMMENDATIONS	11-6
11.5. REFERENCES FOR CHAPTER 11	11-7
APPENDIX 11A	11A-1
12. INTAKE RATES FOR VARIOUS HOME PRODUCED FOOD ITEMS	12-1
12.1. BACKGROUND	12-1
12.2. METHODS	12-2
12.3. RESULTS	12-8
12.4. ADVANTAGES AND LIMITATIONS	12-9
12.5. RECOMMENDATIONS	12-9
12.6. REFERENCES FOR CHAPTER 12	12-10
APPENDIX 12A	12A-1
13. BREAST MILK INTAKE	13-1
13.1. BACKGROUND	13-1
13.2. KEY STUDIES ON BREAST MILK INTAKE	13-1
13.3. OTHER RELEVANT STUDIES ON BREAST MILK INTAKE	13-4
13.4. KEY STUDIES ON LIPID CONTENT AND FAT INTAKE FROM BREAST MILK	13-5
13.5. OTHER FACTORS	13-6
13.6. RECOMMENDATIONS	13-8
13.7. REFERENCES FOR CHAPTER 13	13-10
14. ACTIVITY FACTORS	14-1
14.1. ACTIVITY PATTERNS	14-1
14.2. OCCUPATIONAL MOBILITY	14-10
14.3. POPULATION MOBILITY	14-11
14.4. RECOMMENDATIONS	14-14
14.5. REFERENCES FOR CHAPTER 14	14-16
APPENDIX 14A	14A-1
APPENDIX 14B	14B-1

TABLE OF CONTENTS (continued)

	<u>Page No.</u>
15. CONSUMER PRODUCTS	15-1
15.1. BACKGROUND	15-1
15.2. KEY CONSUMER PRODUCTS USE STUDIES	15-1
15.3. RELEVANT CONSUMER PRODUCTS USE STUDY	15-4
15.4. RECOMMENDATIONS	15-5
15.5. REFERENCES FOR CHAPTER 15	15-5
APPENDIX 15A	15A-1
16. REFERENCE RESIDENCE	16-1
16.1. INTRODUCTION	16-1
16.2. BUILDING CHARACTERISTICS	16-2
16.3. TRANSPORT RATES	16-8
16.4. SOURCES	16-22
16.5. ADVANCED CONCEPTS	16-24
16.6. RECOMMENDATIONS	16-25
16.7. REFERENCES FOR CHAPTER 16	16-25
GLOSSARY	G-1

LIST OF TABLES

	<u>Page No.</u>
Table 1-1. Considerations Used to Rate Confidence in Recommended Values	1-6
Table 1-2. Summary of Exposure Factor Recommendations and Confidence Ratings	1-7
Table 1-3. Characterization of Variability in Exposure Factors	1-9
Table 1A-1. Procedures for Modifying IRIS Risk Values for Non-standard Populations	1A-4
Table 2-1. Three Types of Uncertainty and Associated Sources and Examples	2-3
Table 2-2. Approaches to Quantitative Analysis of Uncertainty	2-6
Table 3-1. Daily Total Tapwater Intake Distribution for Canadians, by Age Group (Approx. 0.20 L Increments, Both Sexes, Combined Seasons)	3-2
Table 3-2. Average Daily Tapwater Intake of Canadians (expressed as milliliters per kilogram body weight)	3-3
Table 3-3. Average Daily Total Tapwater Intake of Canadians, by Age and Season (L/day)	3-4
Table 3-4. Average Daily Total Tapwater Intake of Canadians as a Function of Level of Physical Activity at Work and in Spare Time (16 years and Older, Combined Seasons, L/day)	3-4
Table 3-5. Average Daily Tapwater Intake Apportioned Among Various Beverages (Both Sexes, by Age, Combined Seasons, L/day)	3-5
Table 3-6. Total Tapwater Intake (mL/day) for Both Sexes Combined	3-6
Table 3-7. Total Tapwater Intake (mL/kg-day) for Both Sexes Combined	3-7
Table 3-8. Summary of Tapwater Intake by Age	3-8
Table 3-9. Total Tapwater Intake (as Percent of Total Water Intake) by Broad Age Category	3-8
Table 3-10. General Dietary Sources of Tapwater for Both Sexes	3-9
Table 3-11. Summary Statistics for Best-Fit Lognormal Distributions for Water Intake Rates	3-10
Table 3-12. Estimated Quantiles and Means for Total Tapwater Intake Rates (mL/day)	3-11
Table 3-13. Average Total Tapwater Intake Rate by Sex, Age, and Geographic Area	3-11
Table 3-14. Frequency Distribution of Total Tapwater Intake Rates	3-12
Table 3-15. Intake Rates of Total Fluids and Total Tapwater by Age Group	3-12
Table 3-16. Mean Per Capita Drinking Water Intake Based on USDA, CSFII Data From 1989-91 (mL/day)	3-13
Table 3-17. Assumed Tapwater Content of Beverages	3-14
Table 3-18. Intake of Total Liquid, Total Tapwater, and Various Beverages (L/day)	3-16
Table 3-19. Summary of Total Liquid and Total Tapwater Intake for Males and Females (L/day)	3-17
Table 3-20. Mean and Standard Error for the Daily Intake of Beverages and Tapwater by Age	3-18
Table 3-21. Measured Fluid Intakes (mL/day)	3-18
Table 3-22. Number of Glasses of Tapwater Consumed in 24-Hour Period	3-19

LIST OF TABLES (continued)

	<u>Page No.</u>
Table 3-23. Number of Glasses of Juice Reconstituted with Tapwater Consumed in 24-Hour Period	3-20
Table 3-24. Total Fluid Intake of Women 15-49 Years Old	3-22
Table 3-25. Total Tapwater Intake of Women 15-49 Years Old	3-22
Table 3-26. Total Fluid (mL/Day) Derived from Various Dietary Sources by Women Aged 15-49 Years	3-23
Table 3-27. Water Intake at Various Activity Levels (L/hr)	3-24
Table 3-28. Planning Factors for Individual Tapwater Consumption	3-25
Table 3-29. Drinking Water Intake Surveys	3-26
Table 3-30. Summary of Recommended Drinking Water Intake Rates	3-29
Table 3-31. Confidence in Tapwater Intake Recommendations	3-30
Table 4-1. Distribution of Average (Mean) Daily Soil Ingestion Estimates per Child for 64 Children	4-2
Table 4-2. Estimated Distribution of Individual Mean Daily Soil Ingestion Based on Data for 64 Subjects	4-2
Table 4-3. Estimated Daily Soil Ingestion Based on Aluminum, Silicon, and Titanium Concentrations	4-4
Table 4-4. Calculated Soil Ingestion by Nursery School Children	4-5
Table 4-5. Calculated Soil Ingestion by Hospitalized, Bedridden Children	4-5
Table 4-6. Geometric Mean (GM) and Standard Deviation (GSD) LTM Values for Children at Daycare Centers and Campgrounds	4-6
Table 4-7. Estimated Geometric Mean LTM Values of Children Attending Day-Care Centers According to Age, Weather Category, and Sampling Period	4-7
Table 4-8. Average Daily Soil Ingestion Values Based on Aluminum, Silicon, and Titanium as Tracer Elements	4-8
Table 4-9. Mean and Standard Deviation Percentage Recovery of Eight Tracer Elements	4-9
Table 4-10. Soil and Dust Ingestion Estimates for Children Aged 1-4 Years	4-10
Table 4-11. Estimated Soil Ingestion Rate Summary Statistics and Parameters for Distributions Using Binder et al. (1986) Data with Actual Fecal Weights	4-12
Table 4-12. Estimates of Soil Ingestion for Children	4-13
Table 4-13. Tukey's Multiple Comparison of Mean Log Tracer Recovery in Adults Ingesting Known Quantities of Soil	4-14
Table 4-14. Positive/Negative Error (bias) in Soil Ingestion Estimates in the Calabrese et al. (1989) Mass-balance Study	4-15
Table 4-15. Soil Ingestion Rates for Assessment Purposes	4-16
Table 4-16. Estimates of Soil Ingestion for Adults	4-17
Table 4-17. Adult Daily Soil Ingestion by Week and Tracer Element After Subtracting Food and Capsule Ingestion, Based on Median Amherst Soil Concentrations: Means and Medians Over Subjects (mg)	4-18
Table 4-18. Daily Soil Ingestion Estimation in a Soil-Pica Child by Tracer and by Week (mg/day)	4-19
Table 4-19. Ratios of Soil, Dust, and Residual Fecal Samples in the Pica Child	4-20

<i>E</i>	<i>F</i>	<i>H</i>
----------	----------	----------

LIST OF TABLES (continued)

	<u>Page No.</u>
Table 4-20. Soil Intake Studies	4-21
Table 4-21. Confidence in Soil Intake Recommendation	4-23
Table 4-22. Summary of Recommended Values for Soil Ingestion	4-24
Table 5-1. Comparisons of Estimated Basal Metabolic Rates (BMR) with Average Food-energy Intakes for Individuals Sampled in the 1977-78 NFCS	5-3
Table 5-2. Daily Inhalation Rates Calculated from Food-Energy Intakes	5-4
Table 5-3. Daily Inhalation Rates Obtained from the Ratios Of Total Energy Expenditure to Basal Metabolic Rate (BMR)	5-5
Table 5-4. Daily Inhalation Rates Based on Time-Activity Survey	5-7
Table 5-5. Inhalation Rates for Short-Term Exposures	5-6
Table 5-6. Calibration and Field Protocols for Self-Monitoring of Activities Grouped by Subject Panels	5-9
Table 5-7. Subject Panel Inhalation Rates (IR) by Mean IR, Upper Percentiles, and Self-Estimated Breathing Rates	5-9
Table 5-8. Distributions of Individual and Group Inhalation/Ventilation Rate for Outdoor Workers	5-10
Table 5-9. Individual Mean Inhalation Rate (m^3/hr) by Self-Estimated Breathing Rate or Job Activity Category for Outdoor Workers	5-11
Table 5-10. Distribution of HR and Predicted IR, by Location and Activity Levels for Elementary (EL) and High School (HS) Students	5-12
Table 5-11. Average Hours Spent per Day in a Given Location and Activity Level for Elementary (EL) and High School (HS) Students	5-13
Table 5-12. Distribution Patterns of Daily Inhalation Rates for Elementary (EL) and High School Students (HS) Grouped by Activity Level	5-13
Table 5-13. Summary of Average Inhalation Rates (m^3/hr) by Age Group and Activity Levels for Laboratory Protocols	5-14
Table 5-14. Summary of Average Inhalation Rates (m^3/hr) by Age Group and Activity Levels in Field Protocols	5-15
Table 5-15. Distribution Pattern of Predicted VR and EVR (Equivalent Ventilation Rate) for Outdoor Workers	5-17
Table 5-16. Distribution Pattern of Inhalation Rate by Location and Activity Type for Outdoor Workers	5-18
Table 5-17. Actual Inhalation Rates Measured at Four Ventilation Levels	5-18
Table 5-18. Summary of Human Inhalation Rates for Men, Women, and Children by Activity Level ($m^3/hour$)	5-19
Table 5-19. Activity Pattern Data Aggregated for Three Microenvironments by Activity Level for all Age Groups	5-20
Table 5-20. Summary of Daily Inhalation Rates Grouped by Age and Activity Level	5-20
Table 5-21. Daily Inhalation Rates Estimated From Daily Activities	5-20
Table 5-22. Confidence in Inhalation Rate Recommendations	5-21
Table 5-23. Summary of Recommended Values for Inhalation	5-22
Table 5-24. Summary of Inhalation Rate Studies	5-23

<i>E</i>	<i>F</i>	<i>H</i>
----------	----------	----------

LIST OF TABLES (continued)

	<u>Page No.</u>
<u>APPENDIX 5A</u>	
Table 5A-1.	Statistics of the Age/Gender Cohorts Used to Develop Regression Equations for Predicting Basal Metabolic Rates (BMR) (from Schofield, 1985) 5A-3
Table 5A-2.	Characteristics of Individual Subjects: Anthropometric Data, Job Categories, Calibration Results 5A-3
Table 5A-3.	Mean Minute Ventilation (V_E , L/min) by Group and Activity for Laboratory Protocols 5A-4
Table 5A-4.	Mean Minute Ventilation (V_E , L/min) by Group and Activity for Field Protocols 5A-4
Table 5A-5.	Estimated Minute Ventilation Associated with Activity Level for Average Male Adult 5A-5
Table 5A-6.	Minute Ventilation Ranges by Age, Sex, and Activity Level 5A-6
Table 5A-7.	Reference Values Obtained From Various Literature Sources 5A-7
Table 6-1.	Summary of Equation Parameters for Calculating Adult Body Surface Area 6-12
Table 6-2.	Surface Area of Adult Males in Square Meters 6-13
Table 6-3.	Surface Area of Adult Females in Square Meters 6-13
Table 6-4.	Surface Area of Body part for Adults (m^2) 6-14
Table 6-5.	Percentage of Total Body Surface Area by Part for Adults 6-14
Table 6-6.	Total Body Surface Area of Male Children in Square Meters 6-15
Table 6-7.	Total Body Surface Area of Female Children in Square Meters 6-15
Table 6-8.	Percentage of Total Body Surface Area by Body Part for Children 6-16
Table 6-9.	Descriptive Statistics for Surface Area/BodyWeight Ratios (m^2/kg) 6-17
Table 6-10.	Statistical Results for Total Body Surface Area Distributions (m^2) 6-17
Table 6-11.	Skin Coverage with Soil by Body Part and Activity 6-17
Table 6-12.	Summary of Field Studies 6-20
Table 6-13.	Mean Soil Adherence by Activity and Body Region 6-21
Table 6-14.	Surface Area Studies 6-22
Table 6-15.	Summary of Recommended Values for Skin Surface Area 6-23
Table 6-16.	Confidence in Body Surface Area Measurement Recommendation 6-23
Table 6-17.	Confidence in Dermal Adherence Recommendations 6-24
Table 6-18.	Summary of Soil Adherence Studies 6-25
Table 6-A1.	Estimated Parameter Values for Different Age Intervals 6-A5
Table 6-A2.	Summary of Surface Area Parameter Values for the DuBois and DuBois Model 6-A6
Table 7-1.	Body Weights of Adults (kilograms) 7-1
Table 7-2.	Body Weights of Children (kilograms) 7-1
Table 7-3.	Weight in Kilograms for Males 18-74 Years of Age--Number Examined, Mean, Standard Deviation, and Selected Percentiles, by Race and Age: United States, 1976-1980 7-2
Table 7-4.	Weight in Kilograms for Females 18-74 Years of Age--Number Examined, Mean, Standard Deviation, and Selected Percentiles, by Race and Age: United States, 1976-1980 7-3

<i>E</i>	<i>F</i>	<i>H</i>
----------	----------	----------

LIST OF TABLES (continued)

	<u>Page No.</u>
Table 7-5. Weight in Kilograms for Males 6 Months-19 Years of Age-- Number Examined, Mean, Standard Deviation, and Selected Percentiles, by Sex and Age: United States, 1976-1980	7-4
Table 7-6. Weight in Kilograms for Females 6 Months-19 Years of Age-- Number Examined, Mean, Standard Deviation, and Selected Percentiles, by Sex and Age: United States, 1976-1980	7-5
Table 7-7. Statistics for Probability Plot Regression Analyses Female's Body Weights 6 Months to 20 Years of Age	7-6
Table 7-8. Statistics for Probability Plot Regression Analyses Male's Body Weights 6 Months to 20 Years of Age	7-6
Table 7-9. Summary of Body Weight Studies	7-8
Table 7-10. Summary of Recommended Values for Body Weight	7-8
Table 7-11. Confidence in Body Weight Recommendations	7-14
Table 8-1. Expectation of Life at Birth, 1970 to 1993, and Projections, 1995 to 2010	8-2
Table 8-2. Confidence in Lifetime Expectancy Recommendations	8-3
Table 9-1. Sub-category Codes and Definitions Used in the CSFII 1989-91 Analysis	9-4
Table 9-2. Weighted and Unweighted Number of Observations for CSFII Data Used in Analysis of Food Intake	9-5
Table 9-3. Intake of Total Fruits (g/kg-day)	9-11
Table 9-4. Intake of Total Vegetables (g/kg-day)	9-12
Table 9-5. Intake of Individual Fruits and Vegetables (g/kg-day)	9-13
Table 9-6. Intake of USDA Categories of Fruits and Vegetables (g/kg-day)	9-19
Table 9-7. Intake of Exposed, Protected, and Root Fruits and Vegetables (g/kg-day)	9-20
Table 9-8. Quantity ("as consumed") of Fruits and Vegetables Consumed Per Eating Occasion and the Percentage of Individuals Using These Foods in 3 Days	9-21
Table 9-9. Mean Per Capita Intake Rates (as consumed) for Fruits and Vegetables Based on All Sex/Age/Demographic Subgroups	9-22
Table 9-10. Mean Total Fruit Intake in a Day by Sex and Age (1977-1978)	9-29
Table 9-11. Mean Total Fruit Intake in a Day by Sex and Age (1987-1988)	9-29
Table 9-12. Mean Total Vegetable Intake in a Day by Sex and Age (1977-1978)	9-30
Table 9-13. Mean Total Vegetable Intake in a Day by Sex and Age (1987-1988)	9-30
Table 9-14. Mean and Standard Error for the Per Capita Daily Intake of Food Class and Subclass by Region (g/day "as consumed")	9-31
Table 9-15. Mean and Standard Error for the Daily Intake of Food Subclasses Per Capita by Age (g/day "as consumed")	9-32
Table 9-16. Consumption of Foods (g dry weight/day) for Different Age Groups and Estimated Lifetime Average Daily Food Intakes for a US Citizen (averaged across sex) Calculated from the FDA Diet Data	9-33
Table 9-17. Mean Daily Intake of Foods (grams) Based on the Nutrition Canada Dietary Survey	9-33

<i>E</i>	<i>F</i>	<i>H</i>
----------	----------	----------

LIST OF TABLES (continued)

	<u>Page No.</u>
Table 9-18. Per Capita Consumption of Fresh Fruits and Vegetables in 1991	9-34
Table 9-19. Mean Moisture Content of Selected Fruits, Vegetables, and Grains Expressed as Percentages of Edible Portions	9-35
Table 9-20. Summary of Fruit and Vegetable Intake Studies	9-38
Table 9-21. Summary of Recommended Values for Per Capita Intake of Fruits and Vegetables and Serving Size	9-39
Table 9-22. Confidence in Fruit and Vegetable Intake Recommendations	9-40
Table 9-23. Confidence in Fruits and Vegetable Serving Size Recommendations	9-41
Table 9A-1. Fraction of Grain and Meat Mixture Intake Represented by Various Food Items/Groups	9A-3
Table 10-1. Total Fish Consumption by Demographic Variables	10-3
Table 10-2. Mean and 95th Percentile of Fish Consumption (g/day) by Sex and Age	10-4
Table 10-3. Percent Distribution of Total Fish Consumption for Females by Age	10-5
Table 10-4. Percent Distribution of Total Fish Consumption for Males by Age	10-5
Table 10-5. Mean Total Fish Consumption by Species	10-6
Table 10-6. Best Fits of Lognormal Distributions Using the NonLiner Optimization (NLO) Method	10-7
Table 10-7. Per Capita Fish Consumption Rates (g/day) By Habitat and Fish Type (Uncooked Fish Weight)	10-8
Table 10-8. Distribution of Fish Intake (grams) Per Day Consuming Fish, By Habitat (Uncooked Fish Weight)	10-9
Table 10-9. Per Capita Fish Consumption Rates (milligrams/kg-day) By Habitat and Fish Type (Uncooked Fish Weight)	10-9
Table 10-10. Distribution of Fish Intake (milligrams/kg) Per Day Consuming Fish, By Habitat (Uncooked Fish Weight)	10-10
Table 10-11. Per Capita Fish Consumption rates (g/day) By Habitat and Fish Type (Cooked Fish Weight)	10-10
Table 10-12. Distribution of Fish Intake (grams) Per Day Consuming Fish, By Habitat (Cooked Fish Weight)	10-11
Table 10-13. Distribution of Quantity of Fish Consumed (in grams) Per Eating Occasion, By Age and Sex	10-11
Table 10-14. Percent of Population That Ate Seafood (Including Shellfish, Eels, or Squid)	10-13
Table 10-15. Number of Servings of Seafood Consumed	10-14
Table 10-16. Frequency of Seafood That Was Consumed Being Purchased or Caught By Someone They Knew	10-15
Table 10-17. Mean Fish Intake in a Day, by Sex and Age	10-16
Table 10-18. Estimated Number of Participants in Marine Recreational Fishing by State and Subregion	10-19
Table 10-19. Estimated Weight of Fish Caught (Catch Type A and B1) by Marine Recreational Fishermen by Wave and Subregion	10-20
Table 10-20. Average Daily Intake (g/day) of Marine Finfish, by Region and Coastal Status	10-20
Table 10-21. Estimated Weight of Fish Caught (Catch Type A and B1) by Marine Recreational Fishermen by Species Group and Subregion, Atlantic and Gulf	10-21

LIST OF TABLES (continued)

	<u>Page No.</u>
Table 10-22. Estimated Weight of Fish Caught (Catch Type A and B1) by Marine Recreational Fishermen by Species Group and Subregion, Pacific	10-21
Table 10-23. Median Intake Rates Based on Demographic Data of Sport Fishermen and Their Family/Living Group	10-22
Table 10-24. Cumulative Distribution of Total Fish/Shellfish Consumption by Surveyed Sport Fishermen in the Metropolitan Los Angeles Area	10-23
Table 10-25. Catch Information for Primary Fish Species Kept by Sport Fishermen	10-23
Table 10-26. Percent of Fishing Frequency During the Summer and Fall Seasons in Commencement Bay, Washington	10-24
Table 10-27. Selected Percentile Consumption Estimates (g/d) for the Survey and Total Angler Populations Based on the Reanalysis of the Puffer and Pierce Data	10-24
Table 10-28. Means and Standard Deviations of Selected Characteristics by Subpopulation Groups in Everglades, Florida	10-25
Table 10-29. Estimates of Fish Intake Rates of Licensed Sport Anglers in Maine During the 1989-1990 Ice Fishing or 1990 Open-Water Seasons	10-27
Table 10-30. Analysis of Fish Consumption by Ethnic Groups for "All Waters" (g/day)	10-27
Table 10-31. Total Consumption of Freshwater Fish Caught by All Survey Respondents During the 1990 Season	10-28
Table 10-32. Mean Fish Intake Among Individuals Who Eat Fish and Reside in Households With Recreational Fish Consumption	10-30
Table 10-33. Comparison of Seven-Day Recall and Estimated Seasonal Frequency for Fish Consumption	10-30
Table 10-34. Distribution of Usual Fish Intake Among Survey Main Respondents Who Fished and Consumed Recreationally Caught Fish	10-31
Table 10-35. Mean Sport-Fish Consumption by Demographic Variables, Michigan Sport Anglers Fish Consumption Study, 1991 - 1992	10-32
Table 10-36. Distribution of Fish Intake Rates (from all sources and from sport-caught sources) for 1992 Lake Ontario Anglers	10-34
Table 10-37. Mean Annual Fish Consumption (g/day) for Lake Ontario Anglers, 1992, by Socio-demographic Characteristics	10-34
Table 10-38. Percentile and Mean Intake Rates for Wisconsin Sport Anglers	10-35
Table 10-39. Socio-Demographic Characteristics of Respondents	10-36
Table 10-40. Number of Grams per Day of Fish Consumed by All Adult Respondents (Consumers and Non-consumers Combined) - Throughout the Year	10-37
Table 10-41. Fish Intake Throughout the Year by Sex, Age, and Location by All Adult Respondents	10-38
Table 10-42. Children's Fish Consumption Rates - Throughout Year	10-38
Table 10-43. Number of Local Fish Meals Consumed Per Year by Time Period for all Respondents	10-40
Table 10-44. Mean Number of Local Fish Meals Consumed Per Year by Time Period for all Respondents and Consumers Only	10-41
Table 10-45. Mean Number of Local Fish Meals Consumed Per Year by Time Period and Selected Characteristics for all Respondents	10-41

<i>E</i>	<i>F</i>	<i>H</i>
----------	----------	----------

LIST OF TABLES (continued)

	<u>Page No.</u>
Table 10-46. Sociodemographic Factors and Recent Fish Consumption	10-42
Table 10-47. Percentage of Individuals using Various Cooking Methods at Specified Frequencies	10-45
Table 10-48. Percent Moisture and Fat Content for Selected Species	10-46
Table 10-49. Summary of Fish Intake Studies	10-54
Table 10-50. Confidence in Fish Intake Recommendations for General Population	10-57
Table 10-51. Confidence in Fish Intake Recommendations for Recreational Marine Anglers	10-58
Table 10-52. Confidence in Recommendations for Fish Consumption - Recreational Freshwater	10-59
Table 10-53. Confidence in Recommendations for Native American Subsistence Fish Consumption	10-60
Table 10B-1. Percent of Fish Meals Prepared Using Various Cooking Methods by Residence Size	10B-3
Table 10B-2. Percent of Fish Meals Prepared Using Various Cooking Methods by Age	10B-3
Table 10B-3. Percent of Fish Meals Prepared Using Various Cooking Methods by Ethnicity	10B-4
Table 10B-4. Percent of Fish Meals Prepared Using Various Cooking Methods by Education	10B-4
Table 10B-5. Percent of Fish Meals Prepared Using Various Cooking Methods by Income	10B-5
Table 10B-6. Percent of Fish Meals where Fat was Trimmed or Skin was Removed, by Demographic Variables	10B-6
Table 10B-7. Method of Cooking of Most Common Species Kept by Sportfishermen	10B-7
Table 10B-8. Adult Consumption of Fish Parts	10B-7
Table 10C-1. Daily Average Per Capita Estimates of Fish Consumption U.S. Population - Mean Consumption by Species within Habitat - As Consumed Fish	10-C3
Table 11-1. Intake of Total Meats (g/kg-day)	11-8
Table 11-2. Intake of Total Dairy Products (g/kg-day)	11-9
Table 11-3. Intake of Individual Meat and Dairy Products and Mixtures (g/kg-day)	11-10
Table 11-4. Quantity ("as consumed") of Meat, Poultry, and Dairy Products Consumed per Eating Occasion and the Percentage of Individuals Using These Foods in 3 Days	11-12
Table 11-5. Mean per Capita Intake Rates for Meat, Poultry, and Dairy Products (g/kg-day as consumed) Based on All Sex/Age/Demographic Subgroups	11-13
Table 11-6. Mean Meat Intakes per Individual in a Day by Sex and Age (g/day as consumed) for 1977-1978	11-14
Table 11-7. Mean Meat Intakes per Individual in a Day by Sex and Age (g/day as consumed) for 1987-1988	11-14
Table 11-8. Mean Dairy Product Intakes per Individual in a Day, by Sex and Age (g/day as consumed) for 1977-1978	11-15
Table 11-9. Mean Dairy Product Intakes per Individual in a Day, by Sex and Age (g/day as consumed) for 1987-1988	11-15
Table 11-10. Mean and Standard Error for the Dietary Intake of Food Sub Classes per Capita by Age (grams/day "as consumed")	11-16
Table 11-11. Mean and Standard Error for the Daily Intake of Food Class and Sub Class by Region (grams/day "as consumed")	11-16

LIST OF TABLES (continued)

Page No.

Table 11-12.	Consumption of Meat, Poultry, and Dairy Products for Different Age Groups (averaged across sex), and Estimated Lifetime Average Intakes for 70 Kg Adult Citizens Calculated from the FDA Diet Data	11-17
Table 11-13.	Per Capita Consumption of Meat and Poultry in 1991	11-17
Table 11-14.	Per Capita Consumption for Dairy Products in 1991	11-18
Table 11-15.	Adult Mean Daily Intake (as consumed) of Meat and Poultry Grouped by Region and Gender	11-19
Table 11-16.	Amount (as consumed) of Meat Consumed by Adults Grouped by Frequency of Eatings	11-19
Table 11-17.	Percentage Lipid Content (Expressed as Percentages of 100 Grams of Edible Portions) of Selected Meat and Dairy Products	11-20
Table 11-18.	Fat Content of Meat Products	11-21
Table 11-19.	Fat Intake, Contribution of Various Food Groups to Fat Intake, and Percentage of the Population in Various Meat Eater Groups of the U.S. Population	11-22
Table 11-20.	Mean Total Daily Dietary Fat Intake (g/day) Grouped by Age and Gender	11-22
Table 11-21.	Percentage Mean Moisture Content (Expressed as Percentages of 100 Grams of Edible Portions)	11-23
Table 11-22.	Summary of Meat, Poultry, and Dairy Intake Studies	11-24
Table 11-23.	Summary of Recommended Values for Intake of Meat and Dairy Products and Serving Size	11-25
Table 11-24.	Confidence in Meats and Dairy Products Intake Recommendation	11-26
Table 11-25.	Confidence in Meat and Dairy Serving Size Recommendations	11-27
Table 12-1.	1986 Vegetable Gardening by Demographic Factors	12-1
Table 12-2.	Percentage of Gardening Households Growing Different Vegetables in 1986	12-1
Table 12-3.	Sub-category Codes and Definitions	12-4
Table 12-4.	Weighted and Unweighted Number of Observations for NFCS Data Used in Analysis of Food Intake	12-6
Table 12-5.	Percent Weight Losses from Preparation of Various Meats	12-7
Table 12-6.	Percent Weight Losses from Preparation of Various Fruits	12-7
Table 12-7.	Percent Weight Losses from Preparation of Various Vegetables	12-8
Table 12-8.	Intake of Homegrown Fruits (g/kg-day) - All Regions Combined	12-11
Table 12-9.	Intake of Homegrown Fruits (g/kg-day) - Northeast	12-12
Table 12-10.	Intake of Homegrown Fruits (g/kg-day) - Midwest	12-12
Table 12-11.	Intake of Homegrown Fruits (g/kg-day) - South	12-13
Table 12-12.	Intake of Homegrown Fruits (g/kg-day) - West	12-14
Table 12-13.	Intake of Homegrown Vegetables (g/kg-day) - All Regions Combined	12-15
Table 12-14.	Intake of Homegrown Vegetables (g/kg-day) - Northeast	12-16
Table 12-15.	Intake of Homegrown Vegetables (g/kg-day) - Midwest	12-17
Table 12-16.	Intake of Homegrown Vegetables (g/kg-day) - South	12-18
Table 12-17.	Intake of Homegrown Vegetables (g/kg-day) - West	12-19
Table 12-18.	Intake of Home Produced Meats (g/kg-day) - All Regions Combined	12-20
Table 12-19.	Intake of Home Produced Meats (g/kg-day) - Northeast	12-21

<i>E</i>	<i>F</i>	<i>H</i>
----------	----------	----------

LIST OF TABLES (continued)

	<u>Page No.</u>
Table 12-20. Intake of Home Produced Meats (g/kg-day) - Midwest	12-22
Table 12-21. Intake of Home Produced Meats (g/kg-day) - South	12-23
Table 12-22. Intake of Home Produced Meats (g/kg-day) - West	12-24
Table 12-23. Intake of Home Caught Fish (g/kg-day) - All Regions Combined	12-25
Table 12-24. Intake of Home Caught Fish (g/kg-day) - Northeast	12-26
Table 12-25. Intake of Home Caught Fish (g/kg-day) - Midwest	12-27
Table 12-26. Intake of Home Caught Fish (g/kg-day) - South	12-28
Table 12-27. Intake of Home Caught Fish (g/kg-day) - West	12-29
Table 12-28. Intake of Home Produced Dairy (g/kg-day) - All Regions Combined	12-30
Table 12-29. Intake of Home Produced Dairy (g/kg-day) - Northeast	12-31
Table 12-30. Intake of Home Produced Dairy (g/kg-day) - Midwest	12-32
Table 12-31. Intake of Home Produced Dairy (g/kg-day) - South	12-33
Table 12-32. Intake of Home Produced Dairy (g/kg-day) - West	12-34
Table 12-33. Seasonally Adjusted Homegrown Intake (g/kg-day)	12-35
Table 12-34. Intake of Homegrown Apples (g/kg-day)	12-36
Table 12-35. Intake of Homegrown Asparagus (g/kg-day)	12-37
Table 12-36. Intake of Home Produced Beef (g/kg-day)	12-38
Table 12-37. Intake of Homegrown Beets (g/kg-day)	12-39
Table 12-38. Intake of Homegrown Broccoli (g/kg-day)	12-40
Table 12-39. Intake of Homegrown Cabbage (g/kg-day)	12-41
Table 12-40. Intake of Homegrown Carrots (g/kg-day)	12-42
Table 12-41. Intake of Homegrown Corn (g/kg-day)	12-43
Table 12-42. Intake of Homegrown Cucumber (g/kg-day)	12-44
Table 12-43. Intake of Home Produced Eggs (g/kg-day)	12-45
Table 12-44. Intake of Home Produced Game (g/kg-day)	12-46
Table 12-45. Intake of Homegrown Lettuce (g/kg-day)	12-47
Table 12-46. Intake of Homegrown Lima Beans (g/kg-day)	12-48
Table 12-47. Intake of Homegrown Okra (g/kg-day)	12-49
Table 12-48. Intake of Homegrown Onions (g/kg-day)	12-50
Table 12-49. Intake of Homegrown Other Berries (g/kg-day)	12-51
Table 12-50. Intake of Homegrown Peaches (g/kg-day)	12-52
Table 12-51. Intake of Homegrown Pears (g/kg-day)	12-53
Table 12-52. Intake of Homegrown Peas (g/kg-day)	12-54
Table 12-53. Intake of Homegrown Peppers (g/kg-day)	12-55
Table 12-54. Intake of Home Produced Pork (g/kg-day)	12-56
Table 12-55. Intake of Home Produced Poultry (g/kg-day)	12-57
Table 12-56. Intake of Homegrown Pumpkin (g/kg-day)	12-58
Table 12-57. Intake of Homegrown Snap Beans (g/kg-day)	12-59
Table 12-58. Intake of Homegrown Strawberries (g/kg-day)	12-60
Table 12-59. Intake of Homegrown Tomatoes (g/kg-day)	12-61
Table 12-60. Intake of Homegrown White Potatoes (g/kg-day)	12-62
Table 12-61. Intake of Homegrown Exposed Fruit (g/kg-day)	12-63
Table 12-62. Intake of Homegrown Protected Fruits (g/kg-day)	12-64
Table 12-63. Intake of Homegrown Exposed Vegetables (g/kg-day)	12-65
Table 12-64. Intake of Homegrown Protected Vegetables (g/kg-day)	12-66
Table 12-65. Intake of Homegrown Root Vegetables (g/kg-day)	12-67

<i>E</i>	<i>F</i>	<i>H</i>
----------	----------	----------

LIST OF TABLES (continued)

	<u>Page No.</u>
Table 12-66. Intake of Homegrown Dark Green Vegetables (g/kg-day)	12-68
Table 12-67. Intake of Homegrown Deep Yellow Vegetables (g/kg-day)	12-69
Table 12-68. Intake of Homegrown Other Vegetables (g/kg-day)	12-70
Table 12-69. Intake of Homegrown Citrus (g/kg-day)	12-71
Table 12-70. Intake of Homegrown Other Fruit (g/kg-day)	12-72
Table 12-71. Fraction of Food Intake that is Home Produced	12-73
Table 12-72. Confidence in Homegrown Food Consumption Recommendations	12-77
Table 13-1. Daily Intakes of Breast Milk	13-2
Table 13-2. Breast Milk Intake Among Exclusively Breast-fed Infants	
During the First 4 Months of Life	13-2
Breast Milk Intake During a 24-Hour Period	13-3
Table 13-3. Breast Milk Intake for Infants Aged 1 to 6 Months	13-3
Table 13-4. Breast Milk Intake Estimated by the DARLING Study	13-4
Table 13-5. Milk Intake for Bottle- and Breast-fed Infants by Age Group	13-4
Table 13-6. Milk Intake for Boys and Girls	13-4
Table 13-7. Intake of Breast Milk and Formula	13-5
Table 13-8. Lipid Content of Human Milk and Estimated Lipid Intake	
Among Exclusively Breast-fed Infants	13-6
Table 13-9. Predicted Lipid Intakes for Breast-fed Infants Under 12 Months of Age	13-6
Table 13-10. Total Energy Intake	13-7
Table 13-11. Energy Intake from Human Milk	13-7
Table 13-12. Number of Meals Per Day	13-8
Table 13-13. Percentage of Mothers Breast-feeding Newborn Infants in the Hospital	
and Infants at 5 or 6 Months of Age in the United States in 1989,	
by Ethnic Background and Selected Demographic Variables	13-9
Table 13-14. Breast Milk Intake Studies	13-12
Table 13-15. Confidence in Breast Milk Intake Recommendations	13-14
Table 13-16. Breast Milk Intake Rates Derived From Key Studies	13-15
Table 13-17. Summary of Recommended Breast Milk and Lipid Intake Rates	13-16
Table 13-18.	
Table 14-1. Time Use Table Locator Guide	14-18
Table 14-2. Mean Time Spent (Minutes) Performing Major Activities Grouped	
by Age, Sex and Type of Day	14-19
Table 14-3. Mean Time Spent in Major Activities Grouped by Type of Day	
for Five Different Age Groups	14-20
Table 14-4. Mean Time Spent in 10 Major Activity Cateogries Grouped	
by Total Sample and Gender for the CARB and National Studies	
(Age 18-64)	14-21
Table 14-5. Total Mean Time Spent at 3 Major Locations Grouped by Total	
Sample and Gender for the CARB and National Study (Ages 18-64)	14-21
Table 14-6. Mean Time Spent at Three Locations for both CARB and National	
Studies (Ages 12 and Older)	14-22
Table 14-7. Mean Time Spent (mins/day) in Various Microenvironments	
Grouped by Total Populationand Gender (12 years and over)	
in the National and CARB Data	14-22

<i>E</i>	<i>F</i>	<i>H</i>
----------	----------	----------

LIST OF TABLES (continued)

	<u>Page No.</u>
Table 14-8. Mean Time Spent (mins/day) in Various Microenvironments by Type of Day (Sample Population Ages 12 and Older)	14-23
Table 14-9. Mean Time Spent (mins/day) in Various Microenvironments by Age Groups	14-24
Table 14-10. Mean Time Children Spent in 10 Major Activity Categories for all Respondents	14-25
Table 14-11. Mean Time Children Spent in 10 Major Activity Categories Grouped by Age and Gender	14-25
Table 14-12. Mean Time Children Spent in 10 Major Activity Categories Grouped by Seasons and Regions	14-26
Table 14-13. Mean Time Children Spent in Six Major Location Categories for All Respondents	14-26
Table 14-14. Mean Time Children Spent in Six Location Categories Grouped by Age and Gender	14-27
Table 14-15. Mean Time Children Spent in Six Location Categories Grouped by Season and Region	14-27
Table 14-16. Mean Time Children Spent in Proximity to Three Potential Exposures Grouped by All Respondents, Age, and Gender	14-28
Table 14-17. Range of Recommended Defaults for Dermal Exposure Factors	14-28
Table 14-18. Cumulative Frequency Distribution of Average Shower Duration for 2,500 Households	14-29
Table 14-19. Frequency of Taking a Shower in One Day	14-30
Table 14-20. Range of the Number of Minutes Spent in the Shower After Showering	14-31
Table 14-21. Distribution for the Number of Minutes Spent in the Shower After Showering	14-32
Table 14-22. Frequency of Taking or Giving a Bath in a Day	14-33
Table 14-23. Range of the Minutes Spent Taking or Giving a Bath	14-34
Table 14-24. Distribution for the Number of Minutes Spent Giving and Taking a Bath	14-35
Table 14-25. Range of the Number of Minutes Spent in the Bathroom Immediately After a Bath	14-36
Table 14-26. Distribution for the Number of Minutes Spent in the Bathroom Immediately After a Bath	14-37
Table 14-27. Range of the Total Number of Minutes Altogether Spent in the Shower or Bathtub	14-38
Table 14-28. Distribution for the Total Number of Minutes Spent in the Shower or Bathtub	14-39
Table 14-29. Range of Number of Minutes Spent in the Bathroom Immediately Following a Shower or Bath	14-40
Table 14-30. Distribution for the Number of Minutes Spent in the Bathroom Immediately Following a Shower or Bath	14-41
Table 14-31. Frequency of Washing the Hands in a Day	14-42
Table 14-32. Distribution for Number of Minutes Working or Being Near Food While Fired, Grilled, or Barbequed	14-43
Table 14-33. Distribution for the Number of Minutes Working or Being Near Open Flames Including Barbeque Flames	14-44
Table 14-34. Distribution for the Number of Times Working or Being Near Excessive Dust in the Air	14-45

<i>E</i>	<i>F</i>	<i>H</i>
----------	----------	----------

LIST OF TABLES (continued)

	<u>Page No.</u>
Table 14-35. Range of the Number of Times An Automobile or Motor Vehicle Was Started	14-46
Table 14-36. Range of the Number of Times a Motor Vehicle Was Started with the Garage Door Closed	14-47
Table 14-37. Distribution for the Number of Minutes Spent at a Gas Station or Auto Repair Shop	14-48
Table 14-38. Distribution for the Number of Minutes Spent While Windows Were Left Open While at Home	14-49
Table 14-39. Distribution for the Number of Minutes the Outside Door was Left Open While at Home	14-50
Table 14-40. Frequency of Opening an Outside Door in the Home in a Day	14-51
Table 14-41. Distribution for the Number of Minutes Spent Running, Walking, or Standing Alongside a Road with Heavy Traffic	14-52
Table 14-42. Distribution for the Number of Minutes Spent in a Car, Van, Truck, or Bus in Heavy Traffic	14-53
Table 14-43. Distribution for the Number of Minutes Spent in a Parking Garage or Indoor Parking Lot	14-54
Table 14-44. Distribution for the Number of Minutes Spent Walking Outside to a Car in the Driveway or Outside Parking Areas	14-55
Table 14-45. Distribution for the Number of Minutes Spent running or Walking Outside	14-56
Table 14-46. Distribution for the Number of Minutes Spent Working for Pay	14-57
Table 14-47. Distribution for the Number of Minutes Spent Working for Pay Between 6PM and 6AM	14-58
Table 14-48. Distribution for Number of Minutes Worked Outdoors	14-59
Table 14-49. Frequency of Sweeping or Vacuuming Floors	14-60
Table 14-50. The Number of Days Since the Floor Area Was Swept or Vacuumed	14-61
Table 14-51. Number of Separate Loads of Laundry Washed at Home	14-62
Table 14-52. Frequency of Using a Dishwasher	14-63
Table 14-53. Frequency of Washing Dishes by Hand	14-64
Table 14-54. Frequency of Washing Clothes in a Washing Machine	14-65
Table 14-55. Range of Number of Minutes Spent Playing on Sand or Gravel	14-66
Table 14-56. Distribution for the Number of Minutes Spent Playing in Sand or Gravel	14-67
Table 14-57. Range of Number of Minutes Spent Playing in Outdoors	14-68
Table 14-58. Distribution for the Number of Minutes Spent Playing in Dirt	14-69
Table 14-59. Range of the Minutes Spent Working in a Garden or Other Circumstances Working with Soil	14-70
Table 14-60. Distribution for the Number of Minutes Spent Working in a Garden or Other Circumstances Working with Soil	14-71
Table 14-61. Range of Number of Minutes Spent Playing on Grass	14-72
Table 14-62. Distribution for the Number of Minutes Spent Playing on Grass	14-73
Table 14-63. The Number of Times Swimming in a Month in Freshwater Swimming Pool	
Table 14-64. Average Amount of Time Actually Spent in the Water by Swimmers	14-74
Table 14-65. The Number of Times Swimming in a Month in Freshwater Swimming Pool	
Table 14-66. Statistics for 24-Hour Cumulative Number of Minutes in a Main Job	14-76
Table 14-67. Statistics for 24-Hour Cumulative Number of Minutes Spent in Food Preparation	14-77

<i>E</i>	<i>F</i>	<i>H</i>
----------	----------	----------

LIST OF TABLES (continued)

	<u>Page No.</u>
Table 14-68. Statistics for 24-Hour Cumulative Number of Minutes Spent in Food Cleanup	14-78
Table 14-69. Statistics for 24-Hour Cumulative Number of Minutes Spent Cleaning House	
Table 14-70. Statistics for 24-Hour Cumulative Number of Minutes Spent in Outdoor Cleaning	14-79
Table 14-71. Statistics for 24-Hour Cumulative Number of Minutes Spent in Clothes Care	14-80
Table 14-72. Statistics for 24-Hour Cumulative Number of Minutes Spent in Car Repair/Maintenance ..	14-81
Table 14-73. Statistics for 24-Hour Cumulative Number of Minutes Spent in Other Repairs	14-82
Table 14-74. Statistics for 24-Hour Cumulative Number of Minutes Spent in Plant Care	14-83
Table 14-75. Statistics for 24-Hour Cumulative Number of Minutes Spent in Animal Care	14-84
Table 14-76. Statistics for 24-Hour Cumulative Number of Minutes Spent in Other Household Work ..	14-85
Table 14-77. Statistics for 24-Hour Cumulative Number of Minutes Spent in Indoor Playing	14-86
Table 14-78. Statistics for 24-Hour Cumulative Number of Minutes Spent in Outdoor Playing	14-87
Table 14-79. Statistics for 24-Hour Cumulative Number of Minutes Spent for Car Repair Services	14-88
Table 14-80. Statistics for 24-Hour Cumulative Number of Minutes Spent	
Washing, Etc.	14-89
Table 14-81. Statistics for 24-Hour Cumulative Number of Minutes Spent Sleeping/Napping	14-90
Table 14-82. Statistics for 24-Hour Cumulative Number of Minutes Spent Attending Full time School ..	14-91
Table 14-83. Statistics for 24-Hour Cumulative Number of Minutes Spent in Active Sports	14-92
Table 14-84. Statistics for 24-Hour Cumulative Number of Minutes Spent in Outdoor Recreation	14-93
Table 14-85. Statistics for 24-Hour Cumulative Number of Minutes Spent in Exercise	
Table 14-86. Statistics for 24-Hour Cumulative Number of Minutes Spent in Food Preparation	14-94
Table 14-87. Statistics for 24-Hour Cumulative Number of Minutes Spent Doing Dishes/Laundry	14-95
Table 14-88. Statistics for 24-Hour Cumulative Number of Minutes Spent in Housekeeping	14-96
Table 14-89. Statistics for 24-Hour Cumulative Number of Minutes Spent Bathing	14-97
Table 14-90. Statistics for 24-Hour Cumulative Number of Minutes Spent in Yardwork/Maintenance ..	14-98
Table 14-91. Statistics for 24-Hour Cumulative Number of Minutes Spent in Sports/Exercise	
Table 14-92. Statistics for 24-Hour Cumulative Number of Minutes Eating or Drinking	14-99
Table 14-93. Statistics for 24-Hour Cumulative Number of Minutes Spent Indoors at Auto Repair	
Shop/Gas Station	14-100
Table 14-94. Statistics for 24-Hour Cumulative Number of Minutes Spent Indoors at a gym/Health Club	14-101
Table 14-95. Statistics for 24-Hour Cumulative Number of Minutes Spent Indoors at the Laundromat ..	14-102
Table 14-96. Statistics for 24-Hour Cumulative Number of Minutes Spent Indoors at Work (Non-Specific)	14-103
Table 14-97. Statistics for 24-Hour Cumulative Number of Minutes Spent Indoors	
at the Dry Cleaners	14-104
Table 14-98. Statistics for 24-Hour Cumulative Number of Minutes Spent Indoors	
at a Bar/Nightclub/Bowling Alley	14-105
Table 14-99. Statistics for 24-Hour Cumulative Number of Minutes Spent Indoors	
at a Restaurant	14-106
Table 14-100. Statistics for 24-Hour Cumulative Number of Minutes Spent Indoors	
at School	14-107

LIST OF TABLES (continued)

	<u>Page No.</u>
Table 14-101. Statistics for 24-Hour Cumulative Number of Minutes Spent Indoors at a Plant/Factory/Warehouse	14-108
Table 14-102. Statistics for 24-Hour Cumulative Number of Minutes Spent Outdoors on a Sidewalk, Street, or in the Neighborhood	14-109
Table 14-103. Statistics for 24-Hour Cumulative Number of Minutes Spent Outdoors in a Parking Lot	14-110
Table 14-104. Statistics for 24-Hour Cumulative Number of Minutes Spent Outdoors at a Service Station or Gas Station	14-111
Table 14-105. Statistics for 24-Hour Cumulative Number of Minutes Spent Outdoors at a Construction Site	14-112
Table 14-106. Statistics for 24-Hour Cumulative Number of Minutes Spent Outdoors on School Grounds/Playground	14-113
Table 14-107. Statistics for 24-Hour Cumulative Number of Minutes Spent Outdoors at a Park/Golf Course	14-114
Table 14-108. Statistics for 24-Hour Cumulative Number of Minutes Spent Outdoors at a Pool/River/Lake	14-115
Table 14-109. Statistics for 24-Hour Cumulative Number of Minutes Spent Outdoors at a Restaurant/Picnic	14-116
Table 14-110. Statistics for 24-Hour Cumulative Number of Minutes Spent Outdoors at a Farm	14-117
Table 14-111. Statistics for 24-Hour Cumulative Number of Minutes Spent at Home in the Kitchen	14-118
Table 14-112. Statistics for 24-Hour Cumulative Number of Minutes Spent in the Bathroom	
Table 14-113. Statistics for 24-Hour Cumulative Number of Minutes Spent at Home in the Bedroom	14-119
Table 14-114. Statistics for 24-Hour Cumulative Number of Minutes Spent at Home in the Garage	14-120
Table 14-115. Statistics for 24-Hour Cumulative Number of Minutes Spent in the Basement	14-121
Table 14-116. Statistics for 24-Hour Cumulative Number of Minutes Spent at Home in the Utility Room or Laundry Room	14-122
Table 14-117. Statistics for 24-Hour Cumulative Number of Minutes Spent at Home in the Outdoor Pool or Spa	14-123
Table 14-118. Statistics for 24-Hour Cumulative Number of Minutes Spent at Home in the Yard or Other Areas Outside the House	14-124
Table 14-119. Statistics for 24-Hour Cumulative Number of Minutes Spent Traveling in a Car	14-125
Table 14-120. Statistics for 24-Hour Cumulative Number of Minutes Spent Traveling in a Truck (Pick-up/Van)	14-126
Table 14-121. Statistics for 24-Hour Cumulative Number of Minutes Spent Traveling on a Motorcycle, Moped, or Scooter	14-127
Table 14-122. Statistics for 24-Hour Cumulative Number of Minutes Spent Traveling in Other Trucks	14-128
Table 14-123. Statistics for 24-Hour Cumulative Number of Minutes Spent Traveling on a Bus	14-129

<i>E</i>	<i>F</i>	<i>H</i>
----------	----------	----------

LIST OF TABLES (continued)

	<u>Page No.</u>
Table 14-124. Statistics for 24-Hour Cumulative Number of Minutes Spent Walking	14-130
Table 14-125. Statistics for 24-Hour Cumulative Number of Minutes Spent Traveling on a Bicycle/Skate Board/Roller Skate	14-131
Table 14-126. Statistics for 24-Hour Cumulative Number of Minutes Spent Waiting at a Bus, Train, etc. Stop	14-132
Table 14-127. Statistics for 24-Hour Cumulative Number of Minutes Spent Traveling on a Train/Subway/Rapid Transit	14-133
Table 14-128. Statistics for 24-Hour Cumulative Number of Minutes Spent Traveling on an Airplane	14-134
Table 14-129. Statistics for 24-Hour Cumulative Number of Minutes Spent Indoors in a Residence (All Rooms)	14-135
Table 14-130. Statistics for 24-Hour Cumulative Number of Minutes Spent Outdoors (Outside the Residence)	14-136
Table 14-131. Statistics for 24-Hour Cumulative Number of Minutes Spent Traveling Inside a Vehicle	14-137
Table 14-132. Statistics for 24-Hour Cumulative Number of Minutes Spent Outdoors Near a Vehicle	14-138
Table 14-133. Statistics for 24-Hour Cumulative Number of Minutes Spent Outdoors Other Than Near a Residence or Vehicle Such as Parks, golf Courses, or Farms	14-139
Table 14-134. Statistics for 24-Hour Cumulative Number of Minutes Spent in an Office or Factory	14-140
Table 14-135. Statistics for 24-Hour Cumulative Number of Minutes Spent in Malls, Grocery Stores, or Other Stores	14-141
Table 14-136. Statistics for 24-Hour Cumulative Number of Minutes Spent in Schools, Churches, Hospitals, and Public Buildings	14-142
Table 14-137. Statistics for 24-Hour Cumulative Number of Minutes Spent in Bars/Nightclubs, Bowling Alleys, and Restaurants	14-143
Table 14-138. Statistics for 24-Hour Cumulative Number of Minutes Spent in Other Outdoors Such as Auto Repair Shops, Laundromats, Gyms, and at Work (Non-specific)	14-144
Table 14-139. Statistics for 24-Hour Cumulative Number of Minutes Spent With Smokers Present	14-145
Table 14-140. Differences in Time Use (hours/week) Grouped by Sex, Employment Status, and Marital Status for the Surveys Conducted in 1965 and 1975	14-152
Table 14-141. Time Use (hours/week) Differences by Age for the Surveys Conducted in 1965 and 1975	14-153
Table 14-142. Time Use (hours/week) Differences by Education for the Surveys Conducted in 1965 and 1975	14-154
Table 14-143. Time Use (hours/week) Differences by Race for the Surveys Conducted in 1965 and 1975	14-155
Table 14-144. Mean Time Spent (hours/week) in 10 Major Activity Categories Grouped by Regions	14-155
Table 14-145. Total Mean Time Spent (mins/day) in Ten Major Activity Categories Grouped by Type of Day	14-156

<i>E</i>	<i>F</i>	<i>H</i>
----------	----------	----------

LIST OF TABLES (continued)

	<u>Page No.</u>
Table 14-146. Mean Time Spent (mins/day) in 10 Major Activity Categories During Four Waves of Interviews	14-156
Table 14-147. Mean Time Spent (hours/week) in 10 Major Activity Categories Grouped by Gender	14-157
Table 14-148. Percent Responses of Children's "Play" (activities) Locations in Maryvale, Arizona	14-157
Table 14-149. Occupational Tenure of Employed Individuals by Age and Sex	14-158
Table 14-150. Occupational Tenure for Employed Individuals Grouped by Sex and Race	14-158
Table 14-151. Occupational Tenure for Employed Individuals Grouped by Sex and Employment Status	14-159
Table 14-152. Occupational Tenure of Employed Individuals Grouped by Major Occupational Groups and Age	14-159
Table 14-153. Voluntary Occupational Mobility Rates for Workers Age 16 and Older	14-160
Table 14-154. Values and Their Standard Errors for Average Total Residence Time, T, for Each Group in Survey	14-160
Table 14-155. Total Residence Time, t (years), Corresponding to Selected Values of R(t) by Housing Category	14-161
Table 14-156. Residence Time of Owner/Renter Occupied Units	14-161
Table 14-157. Percent of Householders Living in Houses for Specified Ranges of Time	14-162
Table 14-158. Descriptive Statistics for Residential Occupancy Period	14-162
Table 14-159. Descriptive Statistics for Both Genders by Current Age	14-163
Table 14-160. Summary of Residence Time of Recent Home Buyers	14-163
Table 14-161. Tenure in Previous Home (Percentage Distribution)	14-164
Table 14-162. Number of Miles Moved (Percentage Distribution)	14-164
Table 14-163. Confidence in Activity Patterns Recommendations	14-165
Table 14-164. Confidence in Occupational Mobility Recommendations	14-172
Table 14-165. Confidence in Population Mobility Recommendations	14-173
Table 14-166. Summary of Recommended Values for Activity Factors	14-174
Table 14A-1. Differences in Average Time Spent in Different Activities Between California and National Studies (Minutes Per Day for Age 18-64)	14A-1
Table 14A-2. Time Spent in Various Micro-environments	14A-3
Table 14A-3. Activity Codes and Descriptors Used For Adult Time Diaries	14A-5
Table 14A-4. Major Time Use Activity Categories	14A-19
Table 14A-5. Mean Time Spent (mins/day) for 87 Activities Grouped by Day of the Week	14A-20
Table 14A-6. Weighted Mean Hours Per Week by Gender: 87 Activities and 10 Subtotals	14A-23
Table 14A-7. Ranking of Occupations by Median Years of Occupational Tenure	14A-26
Table 14B-1. Annual Geographical Mobility Rates, by Type of Movement for Selected 1-Year Periods: 1960-1992 (Numbers in Thousands)	14B-1

LIST OF TABLES (continued)

	<u>Page No.</u>
Table 14B-2. Mobility of the Resident Population by State: 1980	14B-2
Table 15-1. Consumer Products Found in the Typical U.S. Household	15-7
Table 15-2. Frequency of Use For Household Solvent Products	15-10
Table 15-3. Exposure Time of Use For Household Solvent Products	15-11
Table 15-4. Amount of Products Used For Household Solvent Products	15-12
Table 15-5. Time Exposed After Duration of Use For Household Solvent Products	15-13
Table 15-6. Frequency of Use and Amount of Product Used for Adhesive Removers	15-14
Table 15-7. Adhesive Remover Usage by Gender	15-14
Table 15-8. Frequency of Use and Amount of Product Used for Spray Paint	15-15
Table 15-9. Spray Paint Usage by Gender	15-15
Table 15-10. Frequency of Use and Amount of Product Used for Paint Removers/Strippers	15-16
Table 15-11. Paint Stripper Usage by Gender	15-16
Table 15-12. Total Exposure Time of Performing Task and Product Type Used by Task For Household Cleaning Products	15-17
Table 15-13. Percentile Rankings for Total Exposure Time in Performing Household Tasks	15-19
Table 15-14. Mean Percentile Rankings for Frequency of Performing Household Tasks	15-20
Table 15-15. Mean and Percentile Rankings for Exposure Time Per Event of Performing Household Tasks	15-21
Table 15-16. Total Exposure Time for Ten Product Groups Most Frequently Used For Household Cleaning	15-21
Table 15-17. Total Exposure Time of Painting Activity of Interior Painters (hrs)	15-22
Table 15-18. Exposure Time of Interior Painting Activity/Occasion (hrs) and Frequency of Occasions Spent Painting Per Year	15-22
Table 15-19. Amount of Paint Used by Interior Painters	15-22
Table 15-20. Number of Cans or Bottles of Carbonate Soft Drink Consumed by the Respondent	15-23
Table 15-21. Frequency of Cologne, Perfume, Aftershave or Other Fragrances Used in One Day	15-24
Table 15-22. Frequency of Use of Any Aerosol Spray Product for Personal Care Such as Deodorant or Hair Spray	15-25
Table 15-23. Number of Minutes Spent in Activities Working With or Being Near Freshly Applied Paints	15-26
Table 15-24. Number of Minutes Spent in Activities Working With or Near Household Cleaning Agents Such as Scouring Powders or Ammonia	15-27
Table 15-25. Number of Minutes Spent in Activities (At Home or Elsewhere) Working With or Near Floorwax, Furniture Wax or Shoe Polish	15-28

LIST OF TABLES (continued)

	<u>Page No.</u>
Table 15-26. Number of Minutes Spent in Activities Working With or Being Near Glue	15-29
Table 15-27. Number of Minutes Spent in Activitees Working with or Near Solvents, Fumes or Strong Smelling Chemicals	15-30
Table 15-28. Number of Minutes Spent in Activities Working With or Near Spot Removers	15-31
Table 15-29. Number of Minutes Spent in Activites Working With or Near Gasoline or Diesel-Powered Equipment, Besides Automobiles	15-32
Table 15-30. Number of Minutes Spent Using Any Microwave Oven	15-33
Table 15-31. Frequency of Use of Humidifier at Home	15-34
Table 15-32. Number of Times Pesticides Were Applied by the Professional at Home to Eradicate Insects, Rodents, or Other Pests	15-35
Table 15-33. Number of Times Pesticides Were Applied by the Consumer at Home to Eradicate Insects, Rodents, or Other Pests	15-36
Table 15-34. Number of Minutes Spent in Activities Working With or Near Pesticides, Including Bug Sprays or Bug Strips	15-37
Table 15-35. Range of Number of Minutes Spent Smoking Cigars or Pipe Tobacco By the Number of Respondents	15-38
Table 15-36. Number of Minutes Spent Smoking Cigars or Pipe Tobacco	15-39
Table 15-37. Range of Numbers of Cigarettes Smoked Based on the Number of Respondents	15-40
Table 15-38. Range of the Number of Cigarettes Smoked While at Home	15-41
Table 15-39. Number of Cigarettes Smoked by Other People	15-42
Table 15-40. Number of Minutes Spent Smoking	15-43
Table 15-41. Range of Time (Minutes) Spent Smoking	15-44
Table 15-42. Amount and Frequency of Use of Various Cosmetic and Baby Products	15-46
Table 15-43. Summary of Consumer Products Use Studies	15-49
Table 15A-1. Volumes Included in 1992 Simmons Study	15A-3
Table 16-1. Summary of Residential Volume Distributions in Cubic Meters	16-2
Table 16-2. Average Estimated Volumes of U.S. Residences, by Housing Type and Ownership	16-3
Table 16-3. Residential Volumes in Relation to Household Size and Year of Construction	16-3
Table 16-4. Dimensional Quantities for Residential Rooms	16-5
Table 16-5. Examples of Products and Materials Associated with Floor and Wall Surfaces in Residences	16-6
Table 16-6. Percent of Residences with Certain Foundation Types	16-8
Table 16-7. Percent of Residences with Basement, by EPA Region	16-8
Table 16-8. Summary of Major Projects Providing Air Exchange Measurements in the PFT Database	16-11
Table 16-9. Summary of Statistics for Air Exchange Rates (Air Changes Per Hour-ACH), by Region	16-12
Table 16-10. Regional and Seasonal Distributions for Residential Air Exchange Rates	16-12
Table 16-11. Deposition Rates for Indoor Particles	16-14
Table 16-12. Particle Deposition During Indoor Activities	16-15
Table 16-13. In-house Water Use Rates (gcd), by Study and Type of Use	16-18

<i>E</i>	<i>F</i>	<i>H</i>
----------	----------	----------

LIST OF TABLES (continued)

	<u>Page No.</u>
Table 16-14. Summary of Water Use	16-19
Table 16-15. Showering and Bathing Water Use Characteristics	16-19
Table 16-16. Showering Characteristics for Various Types of Shower Heads	16-19
Table 16-17. Toilet Water Use Characteristics	16-19
Table 16-18. Toilet Frequency Use Characteristics	16-20
Table 16-19. Dishwasher Frequency Use Characteristics	16-20
Table 16-20. Dishwasher Water Use Characteristics	16-20
Table 16-21. Clothes Washer Frequency Use Characteristics	16-20
Table 16-22. Clothes Washer Water Use Characteristics	16-20
Table 16-23. Range of Water Uses for Clothes Washers	16-20
Table 16-24. Particle Deposition and Resuspension During Normal Activities	16-21
Table 16-25. Dust Mass Loading After One Week Without Vacuum Cleaning	16-21
Table 16-26. Totalized Dust Loading for Carpeted Areas	16-21
Table 16-27. Simplified Source Descriptions for Airborne Contaminants	16-22
Table 16-28. Volume of Residence Surveys	16-30
Table 16-29. Air Exchange Rates Surveys	16-31
Table 16-30. Confidence in House Volume Recommendation	16-32
Table 16-31. Confidence in Air Exchange Rates Recommendation	16-33

LIST OF FIGURES

	<u>Page No.</u>
Figure 1-1.	Road Map to Exposure Factor Recommendations
Figure 6-1.	SA/BW Distributions for Infants, Adults, and All Ages Combined
Figure 6-2.	Surface Area Frequency Distribution: Men and Women
Figure 10-1.	Seasonal Fish Consumption: Wisconsin Chippewa, 1990
Figure 10-2.	Peak Fish Consumption: Wisconsin Chippewa, 1990
Figure 14-1.	Distribution of Individuals Moving by Type of Move: 1991-92
Figure 16-1.	Elements of Residential Exposure
Figure 16-2.	Cumulative Frequency Distributions for Residential Volumes
Figure 16-3.	Configurations for Residential Forced-air Systems
Figure 16-4.	EPA Regions and Census Regions
Figure 16-5.	Idealized Patterns of Particle Deposition Indoors
Figure 16-6.	Air Flows for Multiple-zone Systems
Figure 16-7.	Characteristic Volumes and Airflow Rates for Two-zone Situations